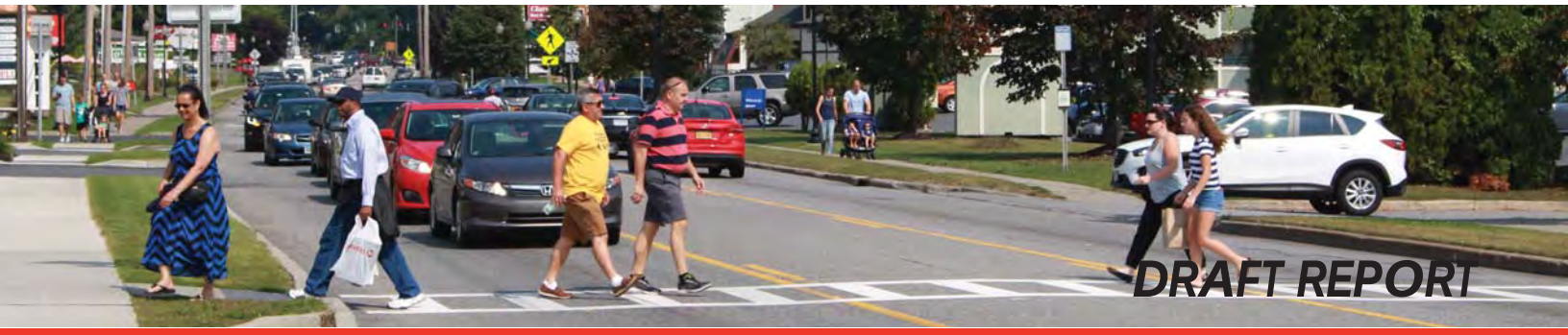
WARREN COUNTY PATHWAY CORRIDOR PROJECT



DRAFT REPORT

By:

Creighton Manning

DECEMBER 2018

Prepared for:

EDC Warren County, NY

Town of Queensbury

nationalgrid

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Executive Summary

The Warren County Economic Development Corporation (EDC), Warren County, Town of Queensbury, and National Grid initiated this study to evaluate future transportation conditions with growth, and identify potential transportation improvements along the approximate two and one-half mile length of US Route 9 in the Town of Queensbury, from Sweet Road north to NY Route 149, known as the Pathway Corridor.

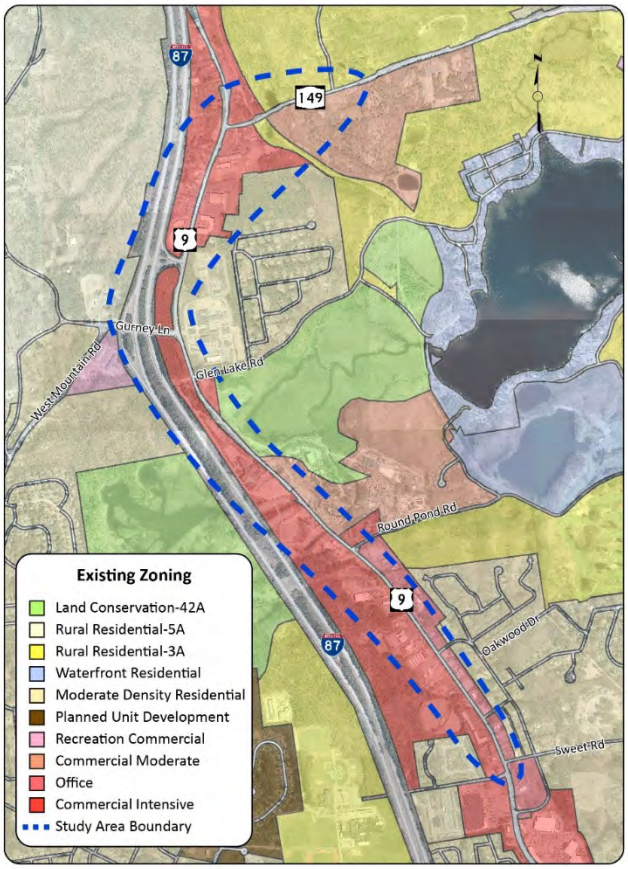
The Pathway Corridor is a key link for travel between Interstate 87 (the Northway) and regional attractions contributing significantly to the Upstate tourism, jobs, and economy. The year round success and growth of this corridor has led to traffic concerns beyond the normal seasonal peaks associated with the region's retail and tourism attractions. The concern is that existing congestion and the potential for additional traffic have and will continue to hamper mobility and deter existing and future customers and businesses from the area.

The goal of this study is to provide an assessment of the feasibility, benefits, and impacts of different transportation improvements in the corridor by evaluating alternatives that consider pedestrians and passenger vehicle operations and safety.

Existing and Future Conditions

US Route 9 is classified as a Principal Arterial, meaning one of its primary functions is to serve longer distance trips and provide reasonable mobility for through traffic, while also providing access to local parcels. Traffic volumes in the Pathway Corridor are 20 to 25 percent higher during the summer as compared to average conditions. A review of travel times shows that it typically takes six to seven minutes longer to travel the corridor during the summer, than during average conditions in the month of April. While the area currently thrives economically, 65% of the people at the first public meeting indicated that they often avoid the area due to traffic congestion.

While the area may look fairly developed from the road, there are still large tracts of vacant developable or underutilized land and the area has been designated as a targeted growth area by the Warren County EDC. As the Pathway Corridor grows, traffic operations will be further affected by increased travel times and reduced mobility, unless the growth is managed and transportation improvements occur in line with development. The combined effect of the pending and speculative development shows that there are 14 parcels that could support approximately 600,000 square feet of additional development, and generate approximately 1,800 additional peak hour vehicle trips.

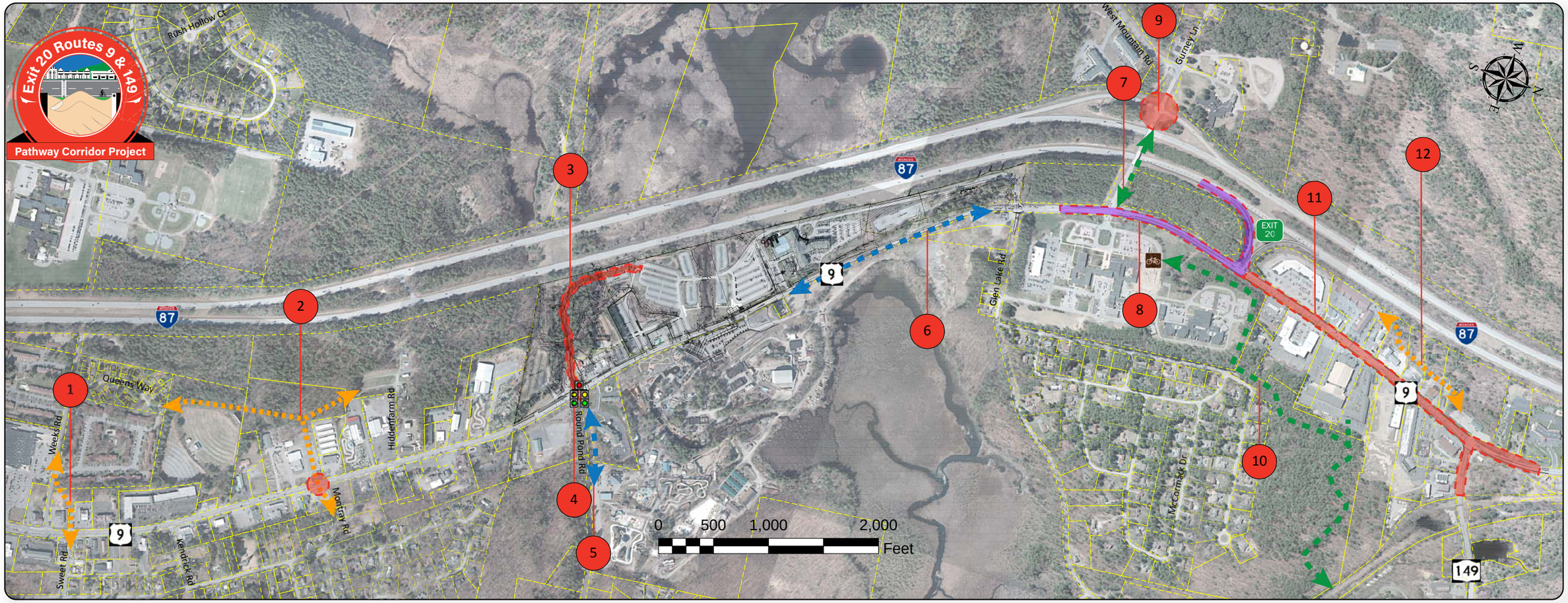


The results of the analysis indicates that if nothing is done to improve traffic conditions in the Pathway Corridor, then travel times could double. It is expected that people would avoid the area in ever greater amounts rather than experience delays at this level. Thus, the potential for additional economic development and jobs appears limited without transportation investment in the area. Ensuring that the transportation facilities are capable of accommodating the increased demand associated with the new development, achieving consensus about the needed transportation improvements, and finding a way to pay for the improvements are the fundamental objectives of this study.

The Plan

The Plan is to provide good regional mobility and support and ensure the economic livelihood of the area, through context sensitive transportation improvements which upgrade existing roads rather than build new ones. The recommendations were developed based on the existing conditions, previous studies, input from the Pathway Corridor Committee, stakeholders, and the general public. Combined with appropriate multi-modal accommodations, the plan will also address the project objectives of safety and accommodating all users.

This plan also recommends that the Town and Warren County EDC work proactively to identify local funding sources to establish the local match and leverage funding for a larger public project (or projects), and to work with the Adirondack Glens Falls Transportation Council (A/GFTC) and the New York State Department of Transportation (NYSDOT) to get a Pathway Corridor Project on the local and Statewide Transportation Improvement Program (TIP). Having a project on the TIP is a first step toward obtaining State and Federal funds. The following figure summarizes the overall study recommendations.



1. Realign Weeks Road to intersect US Route 9 opposite Sweet Road. ($410,000)
2. As redevelopment occurs on the west side of US Rotue 9, provide access opposite Montray Road to a potential future traffic signal or roundabout on US Route 9. Establish connector road to Queens Way and shared access to the new intersection. (Cost TBD public/private)
3. Construct Great Escape Connector Road - (future improvement by Great Escape).
4. Create a four-way intersection at Round Pond Road including a new traffic signal or roundabout and widening Round Pond Road to provide separate turn lanes. The new driveway stub on north side will tie into the future connection by Great Escape. Modify access to Martha's ice cream to provide access to the new signal or roundabout, and consolidate driveways on Route 9. ($760,000 or $1,820,000 if roundabout)
5. Provide sidewalk connection between US Route 9 and Great Escape employee entrance. ($510,000)
6. Provide sidewalk on at least one side to fill gaps in pedestrian network. East side of road is preferred. ($1,150,000)
7. Widen Gurney Lane and provide bike accomodations when bridges are rehabilitated. (Cost TBD as part of bridge project)
8. Build improvements consistent with Great Escape mitigation level 3 (Lengthen Exit 20 Northbound ramp storage and add southbound through lane on US Route 9) – Pursue funding arrangement to complete the improvements prior to Great Escape Level 3 Thresholds being met. Facilitate future parcel access on west side of US Route 9. ($3,640,000)
9. Implement capacity improvement (1. Roundabout; 2. Turn prohibition with adjacent roundabout or; 3. Signal). Traffic Signal at Gurney Lane/Exit 20 Southbound Ramp intersection is the preferred short-term improvement. ($240,000 or $1,400,000 if roundabout)
10. Establish trailhead parking at Warren County Municipal Center and provide multi-use path connection to Warren County Bikeway. Provide path connection from Outlets to Warren County Bikeway. ($1,360,000)
11. Construct roadway capacity and pedestrian crossing management project, including consideration of widening US Route 9 to provide two lanes in each direction with a center turn lane and signalized pedestrian crossings or roundabouts. ($8,900,000 or $13,400,000 if roundabouts)
12. Establish connector road over time as parcels redevelop. (Cost TBD - Private)

G. General Pathway Corridor Theme: Provide pedestrian accomodations at traffic signals, and establish transit stops at signals or where established pedestrian crossings exist.

Note: Improvements listed from south to north, not in order of importance

EDC Warren County, NY

Suggested Improvements
Warren County Pathway Corridor

Creighton Manning

Figure ES-1 Draft: December, 2018

Chapter 1. Introduction

The Warren County Economic Development Corporation (EDC), Warren County, Town of Queensbury, and National Grid initiated this study to evaluate future transportation conditions with growth, and identify potential transportation improvements along the approximate two and one-half mile length of US Route 9 in the Town of Queensbury, from Sweet Road north to NY Route 149, known as the Pathway Corridor.

STUDY GOAL

Provide an assessment of the feasibility, benefits, and impacts of different transportation improvements in the corridor by evaluating alternatives that consider pedestrians and passenger vehicle operations and safety.

The Pathway Corridor is a key link for travel between Interstate 87 (the Northway) and regional attractions including the Adirondacks and Lake George, contributing significantly to the Upstate tourism, jobs and economy. The area is also home to many significant regional destinations and employment centers including Six Flags Great Escape, Davidson's/Northern Eagle Brewery, Sutton's Market, Martha's Ice Cream, various regional outlet centers, Warren County Municipal Center, and other destinations. In addition, the Pathway Corridor has been identified as a targeted growth area for investment over the next ten years. While the corridor experiences seasonal traffic peaks in the summer and fall/winter seasons, the year round success and growth of this corridor has led to traffic concerns beyond the normal seasonal peaks associated with the region's retail and tourism attractions. The concern is that existing congestion and the potential for additional traffic will hamper mobility and will deter existing and future customers and businesses from the area.

As such, the study's Pathway Corridor Committee established the Study Goal above and Project Objectives below.

PROJECT OBJECTIVES

- Identify and address existing traffic congestion and safety concerns
- Provide accommodations for all users
- Enable economic growth
- Develop recommendations that can be implemented and solidify consensus among stakeholders

The Pathway Corridor Committee (PCC) was established to help guide the study and facilitate the flow of information. In addition to reviewing technical information, the PCC provided input on public outreach and assisted in notifying citizens and businesses about public meetings and the study in general. PCC members include representatives from the Town of Queensbury, Warren County DPW, EDC Warren County, NYSDOT, A/GFTC, and National Grid.

Study Area

The Pathway Corridor is located in the vicinity of Interchange 20 of the Adirondack Northway (I-87) and extends approximately 2.5 miles along US Route 9, from NY Route 149 to the intersection of Sweet Road, as shown on Figure 1.1.

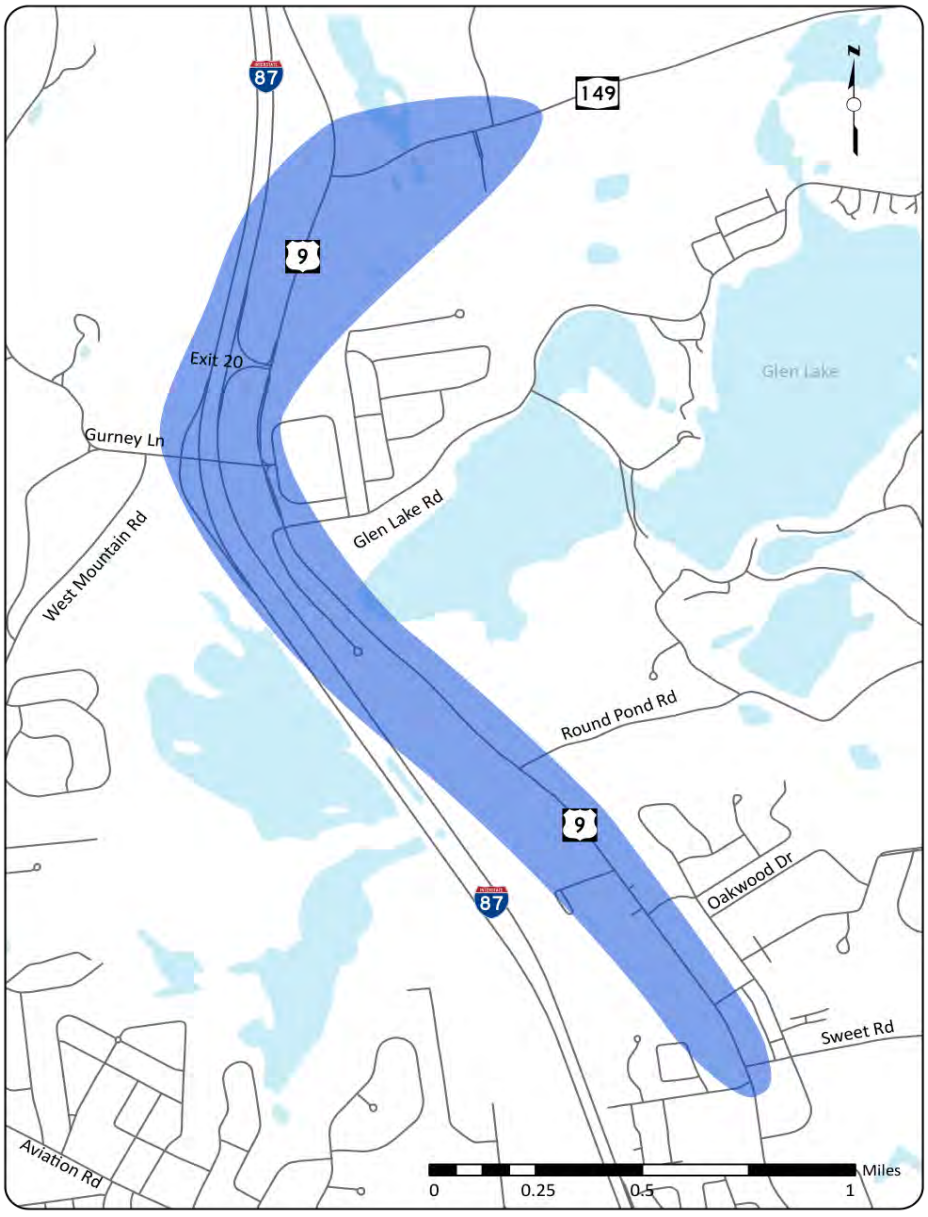
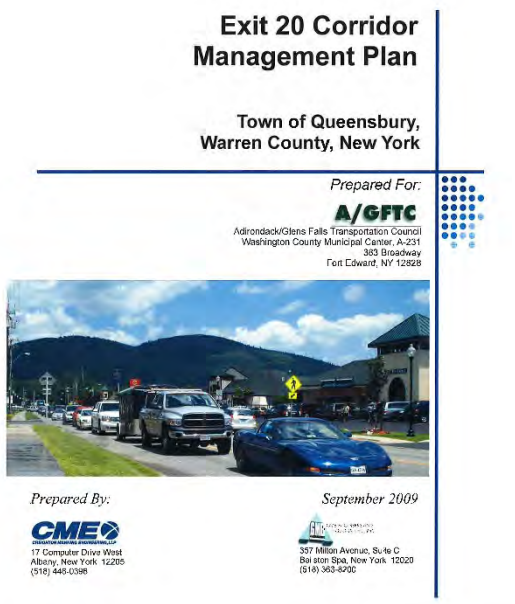


Figure 1.1. Study Area

Previous Studies

In September 2009, the Adirondack/Glens Falls Transportation Council (A/GFTC) completed the *Corridor Management Study for the Exit 20 Interchange Area,* which encompassed the northern portion of the Pathway Corridor from Round Pond Road to NY Route 149. The stated goal of the study was to develop a comprehensive and implementable recommendation plan that includes evaluation and recommendations for signalized intersections, improved accommodations for pedestrians, bicyclists, and public transit, congestion and accident mitigation strategies.



An assessment of existing conditions indicated that vehicle operations in the corridor were relatively poor and that capacity and operational improvements within the corridor should be pursued, particularly along US Route 9 between I-87 Exit 20 NB Ramps and NY Route 149. Further, the study examined two potential growth scenarios in the corridor. It was concluded that over a 20 year period, traffic volumes could increase by approximately 25% under a low growth scenario, or as much as 50% under a high growth scenario.

In order to improve existing conditions and prepare for future growth, the following corridor wide improvements were identified:

- US Route 9 Median with roundabouts – This alternative included the installation of a raised median along the US Route 9 corridor from NY Route 149 to the I-87 Exit 20 northbound ramp, along with roundabouts at key study intersections. The median would provide a refuge for pedestrians and reduce driveway conflicts by restricting left turns. Motorists needing to change direction would use the roundabouts proposed in the corridor.
- Back Access Alternative – This alternative assumed the construction of a public road east of US Route 9 that connects NY Route 149 to the I-87 Exit 20 Northbound Ramp. This scenario resulted in increased capacity and improved operations on US Route 9; however, potential environmental impacts and ROW impacts would need to be overcome.
- Access Management – This alternative proposed to eliminate/consolidate driveways and improve cross-connectivity between parcels in order to improve the flow of traffic along US Route 9.
- New Interchange – The study evaluated three alternative interchange configurations to address traffic concerns in the area, and determined that an interchange at the Great Escape was not feasible due to environmental impacts. Likewise, construction of a new interchange at NY Route 149 was deemed not feasible due to topographical constraints and excessive costs. The study also examined reconstruction of Exit 20 as a Single Point Interchange, and concluded that despite ROW impacts, this was a feasible alternative.

In addition to the corridor-wide concepts, various recommendations included:

- US Route 9/NY Route 149 – Capacity improvements (signal or roundabout)
- US Route 9/Outlets – Centrally located roundabout
- US Route 9 / I-87 Exit 20 NB Ramp - Capacity improvements (signal or roundabout)
- Gurney Lane / I-87 Exit 20 SB Ramp – Capacity improvements (signal or turn prohibitions with adjacent roundabout)
- US Route 9/ Gurney Lane – Capacity improvements (Convert SB thru lane to a thru/right lane)
- US Route 9/Glen Lake Rd – Improves signal timing
- US Route 9/Round Pond Rd – Turn lanes or signal
- Additional lower cost improvements such as signing and transit improvements

An additional study that is significant to the area is the Great Escape EIS (2000), which identified the need for future transportations improvements as mitigation for projected growth. The EIS called for certain traffic improvements to be implemented over time as various traffic thresholds were met. The improvements include:

Level 1 (completed)

- Grade Separated pedestrian bridge
- Removal of existing traffic signal at Great Escape Southern Driveway
- Optimize signal timings in the corridor

Level 2 (completed)

- Create four-leg intersection at Route 9 and Glen Lake Road by constructing northern end of new access road and install traffic signal. Modify pavement markings to create a designated northbound left-turn lane on Route 9 at the new access road.
- Widen the west side of Route 9 to create a second southbound through lane between Exit 20 and Gurney Lane

Level 3 (not completed)

- Create four-leg intersection at Route 9 and Round Pond Road by constructing southern end of the new access road and install a traffic signal. Modify pavement markings to create a designated northbound left-turn lane on Route 9 at the new access road.
- Widen the eastbound approach of the I-87 Exit 20 northbound off-ramp to create two 300-foot long turn lanes at Route 9.
- Modify islands at the Route 9/I-87 Exit 20 northbound intersection to designate the existing southbound right turn lane as a shared through/right turn lane. Widen the west side of Route 9 to create a second southbound through lane between Exit 20 and Gurney Lane.
- Designate the exclusive right turn lane at the Route 9/Gurney Lane intersection as a shared through/right turn lane. Widen Route 9 from Gurney Lane to Glen Lake Road to provide an

additional southbound through lane for Great Escape traffic. This will connect to the existing exclusive right turn lane at the Route 9/Glen Lake Road intersection.

While the area would benefit from the level 3 improvements, it does not appear that they will be completed in the near future as part of the Great Escape EIS mitigation process. Traffic monitoring has been completed on an annua**/**or bi-annual basis per the requirements of the EIS to see if the existing traffic volumes have met the thresholds established in the EIS. The last monitoring update was completed during 2018 and existing traffic volumes continue to fall well short of the thresholds.

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Chapter 2. Existing Conditions

This Chapter summarizes the existing land use and multimodal transportation infrastructure and operations in the study area.

Roadway Characteristics

US Route 9 extends in a north/south direction through the study area and is classified as a Principal Arterial, meaning one of its primary functions is to serve longer distance trips and provide reasonable mobility for through traffic, while also providing access to local parcels. Within the study area, the roadway is generally three lanes wide, except for the section between Glen Lake Road and Great Escape, which is two lanes wide. Table 2.1 summarizes the existing roadway cross sections along the corridor. The posted speed limit is 40 MPH.

Table 2.1. Typical US Route 9 Cross Sections

Intersecting Street	Number of Lanes	Lane Widths (ft)	Median	Shoulder Width (ft)	Pavement Width (ft)	TWLT Lane
Sweet Road to Great Escape	3	13	12	0	38	Yes
Great Escape to Glen Lake Road	2	12	N/A	6	36	No
Glen Lake Road to Exit 20 NB Ramps	2/3	13	Varies	0	48	No
Exit 20 NB Ramps NY Route 149 to	3	13	12	0	38	Yes

Although, there are no bicycle lanes on US Route 9, bicycles are accommodated on the roadway shoulders where present, or in the 13-foot wide curbside lane. The Warren County Bikeway is located east of the study area, with trail access off of Round Pond Road, and where the path crosses over NY Route 149.

Pedestrians

Pedestrians are generally accommodated on sidewalks located on both sides of the road. Marked crosswalks are present across one or two legs at the signalized intersections, and at three midblock locations in the outlet area between Exit 20 and NY Route 149. Figure 2.1 shows gaps in the sidewalk network between Glen Lake Road and the Six Flags Great Escape.

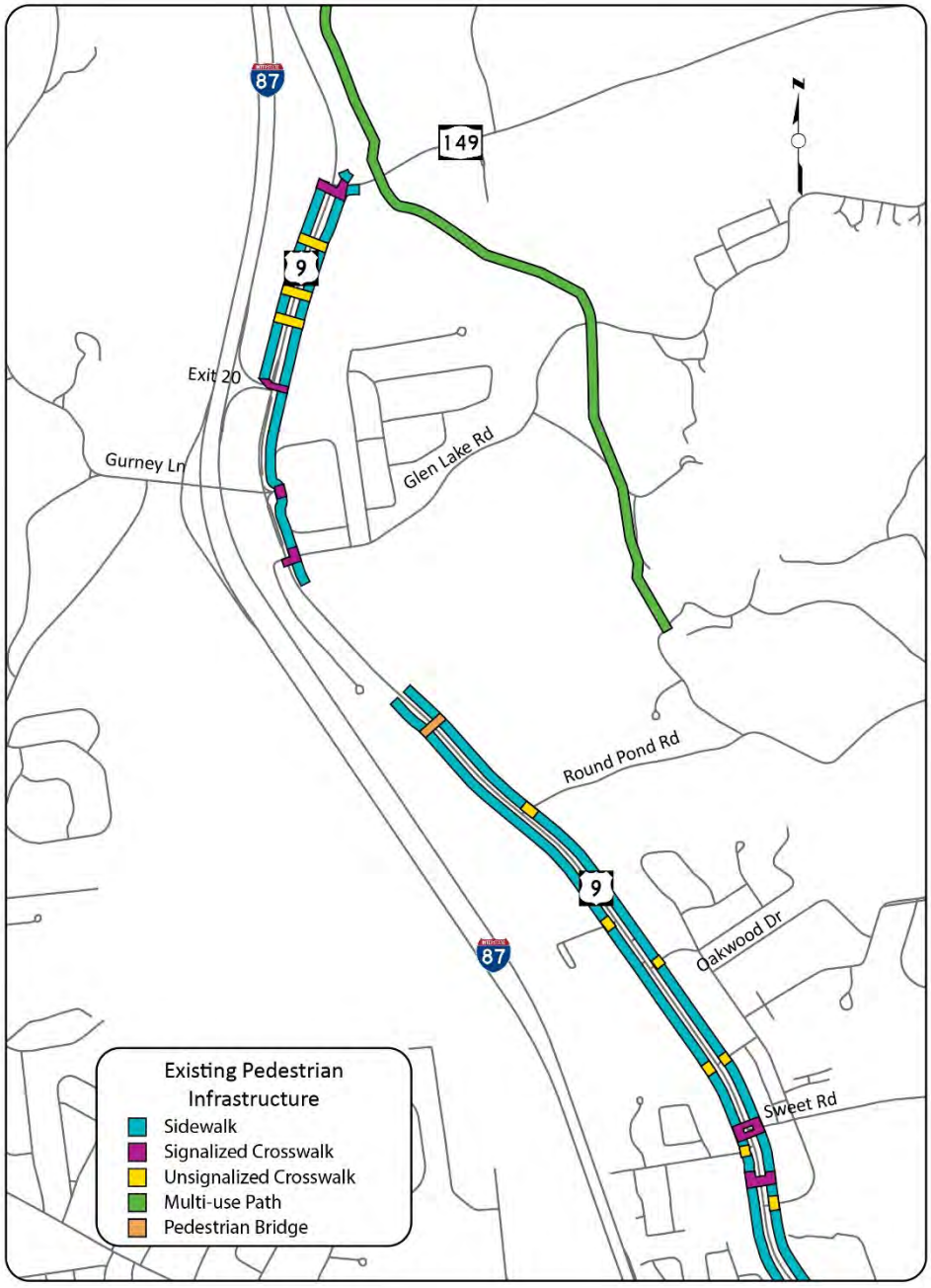


Figure 2.1. Pedestrian Network

Transit

Greater Glens Falls Transit (GGFT) bus route 19 serves the study corridor with transfers available to other routes in Glens Falls and Lake George. Service is provided from Monday through Friday only with 10 trips per day operating on an approximate 90 minute headway. GGFT also provides a summer trolley service in the corridor which runs every half hour beginning the last Saturday in June and continuing through Labor Day. Figure 2.2 shows the GGFT routes and time points within the study area. In addition to the pictured time points, passengers can flag the bus to stop at any safe street corner. It is noted that the Lake George RV Park provides a trolley services that coincides with the operations of the GGFT summer trolley service. The RV Park service transports people from the RV Park to the Log Jam Outlet Center every 30 minutes.

Figure 2.2. Transit Network

Land Use and Zoning

The majority of land along the corridor is commercial, recreation commercial, or institutional. Significant attractors include Six Flags Great Escape theme park, and the "Outlet Area" between Exit 20 and NY Route 149. Meanwhile the area is also home to the Warren County Municipal Center and offices.

Zoning is illustrated on Figure 2.3. The corridor is primarily zoned for commercial use (Moderate, Intensive, and Recreational) with residential neighborhoods of rural and moderate densities located further from US Route 9. While the area may look fairly developed from the road, there are still large tracts of vacant developable or underutilized land and the area has been designated as a targeted growth area by the Warren County EDC. Growth potential is discussed further in Chapter 3.

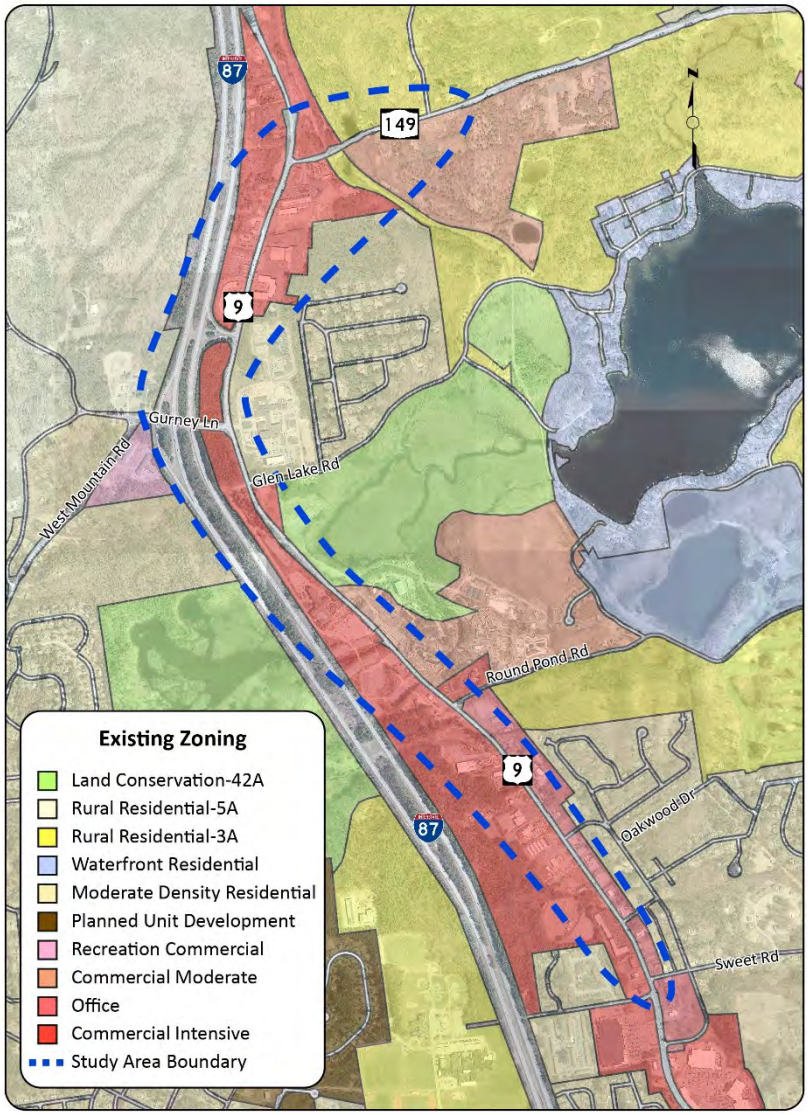


Figure 2.3. Existing Zoning

Accident History

Crash data was provided by the NYSDOT from the Accident Location Information System (ALIS) for the most recent three years of available data (October 1, 2014 to September 30, 2017), for the 2.6 mile segment of US Route 9 from NY Route 149 to Sweet Road. In total, 201 crashes occurred over the three year period along US Route 9 in the study area. A safety screening was performed on the crash data including calculation of segment and intersection crash rates. Tables 2.2 through 2.4 summarize the crash analysis.

Table 2.2 – Summary of Crashes (October 1, 2014 to September 30, 2017)

Type	Crashes
Vehicle	198
Pedestrian	1
Bicycle	2
Total	201

Table 2.3 – Summary of Crash Rates (October 1, 2014 to September 30, 2017)

Accident Location	Number of Crashes	Crash Rate	
		Calculated	NYSDOT Average
Roadway Segment (Acc/MVM)			
US Route 9 from Sweet Road to Gurney Lane	87	2.43	3.50
US Route 9 from Gurney Lane to Exit 20	57	3.80	3.50
US Route 9 from Exit 20 to NY Route 149	84	4.74	4.31
US Route 9 Intersections (Acc/MEV)			
Sweet Road	6	0.28	0.52
Round Pond Road	11	0.60*	0.18
Glen Lake Road	5	0.22	0.52
Gurney Lane	18	0.70	0.52
Exit 20 NB Ramp	16	0.72*	0.32
NY Route 149	9	0.47	0.52

* Crash rate > 1.5 statewide average

From a roadway segment standpoint, Table 2.3 shows that the corridor experiences crash rates generally comparable to the statewide average for similar facilities. From an intersection standpoint, three of the six intersections experienced crash rates above the statewide average for the most recent three year period. Typically, only areas exceeding the statewide average by a statistically significant margin are selected for further analysis. For this study, it is noted that the Round Pond Road and Exit 20 NB Ramp intersections experienced a crash rate of more than 1.5 times the statewide average. Table 2.4 summarizes all of the types of crashes in the corridor including the Round Pond Road intersection.

Table 2.4. Summary of Available Crash Data (October 1, 2014 to September 30, 2017)

Intersection or *Segment*	Collision Severity				Collision Type										Total
	Non-Reportable	Property Damage	Injury	Fatality	Rear-End	Right Angle	Left Turn	Overtaking/Sideswipe	Right Turn	Head On	Fixed Object	Animal	Ped	Bike	
US Route 9/Sweet Road	2	3	1	0	4	2	0	0	0	0	0	0	0	0	**6**
US Route 9/Round Pond Road *	5	3	3	0	3	3	0	0	1	2	2	0	0	0	**11**
US Route 9/Glen Lake Road	2	3	0	0	1	2	0	2	0	0	0	0	0	0	**5**
US Route 9/Gurney Lane	9	6	3	0	14	3	0	0	1	0	0	0	0	0	**18**
US Route 9/Exit 20 *	6	7	3	0	13	0	2	0	0	0	1	0	0	0	**16**
US Route 9/NY Route 149	7	2	0	0	6	0	1	2	0	0	0	0	0	0	**9**
US Route 9 from Sweet Road to Gurney Lane	14	21	8	0	13	10	6	5	1	0	5	0	1	2	**41**
Gurney Lane from US Route 9 to Old West Mountain Road	1	4	2	0	1	1	3	0	0	0	2	0	0	0	**7**
US Route 9 form Gurney Lane to Exit 20	1	6	2	0	5	3	0	0	0	1	0	0	0	0	**9**
US Route 9 from Exit 20 to NY Route 149	24	19	10	1	27	5	2	16	1	1	2	0	0	0	**54**
NY Route 149 from US Route 9 to Ledgeview Circle	9	11	3	0	7	0	2	2	0	2	5	5	0	0	**23**
Study Area Total	**80**	**85**	**35**	**1**	**94**	**29**	**16**	**27**	**4**	**6**	**17**	**5**	**1**	**2**	**201**

* Crash rate > 1.5 statewide average

A review of this crash data shows a number of characteristics summarized below:

- There was one fatal crash located approximately 0.1 miles north of the US Route9/NY Route 149 intersection. The crash, involving a motorcycle, occurred at 3:18 PM on 7/19/2017 during daylight on a dry road surface. Weather at the time of the crash was coded as "clear". Passing or lane usage improperly was coded as a contributing factor.

- The data shows two bicycle crashes along US Route 9 within the last three years. Both crashes occurred on the segment of US Route 9 between Gurney Lane and Sweet Road, with one occurring just north of the Round Pond Road intersection and the other approximately 0.25 miles north of the Sweet Road intersection. Both crashes included turning vehicles traveling northbound. Both crashes occurred during daylight on a dry road surface with weather coded as clear.

- There was one crash involving a pedestrian within the study area that occurred approximately 0.1 miles north of the US Route 9/Round Pond Road intersection. The crash occurred during daylight on a dry road surface with weather coded as clear. The data indicates that the pedestrian was crossing with no signal or crosswalk. Pedestrian error/confusion was coded as a contributing factor.

- Rear end collisions are the most prevalent type of collision in the study area, composing nearly half of all collisions. Right angle collisions were the next most common collision type, constituting 15% of all crashes.

Traffic Volumes

Traffic volumes vary throughout the area and seasonally with higher traffic volumes during the summer months. The following chart shows that traffic volumes are higher on area roadways from about May to October. Volumes on the Northway are approximately 35 to 45 percent higher during the summer as compared to average conditions, while daily volumes on US Route 4 are approximately 15 percent higher than average. The New York State Department of Transportation (NYSDOT) estimates that traffic volumes on US Route 9 in the Pathway Corridor are 20 to 25 percent higher in the summer (Factor Group 40 line in chart applicable to US Route 9).

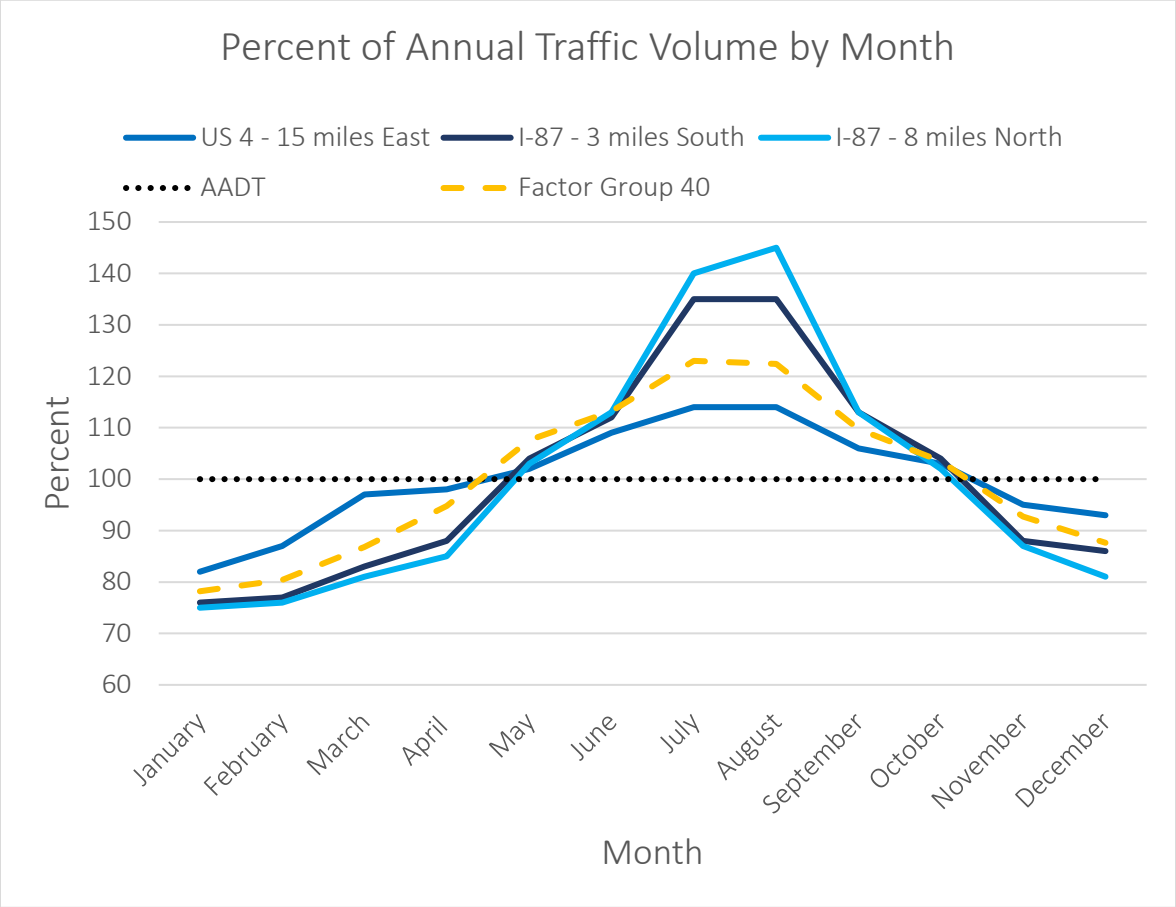


Figure 2.4. Seasonal Traffic Variations

Table 2.5 summarizes the Average Daily Traffic (ADT) volumes in the corridor from Automatic Traffic Recorder (ATR) counts taken during July and August of 2018.

Table 2.5 –Daily Traffic Volumes

Location	2018	
	Summer	Average Annual
US Route 9: Sweet Road to Gurney Lane	15,700	13,070
US Route 9: Gurney Lane to Exit 20 NB Ramps	19,200	16,130
US Route 9: Exit 20 NB Ramps to NY Route 149	17,500	14,700
NY Route 149 East of US Route 9	11,500	9,660

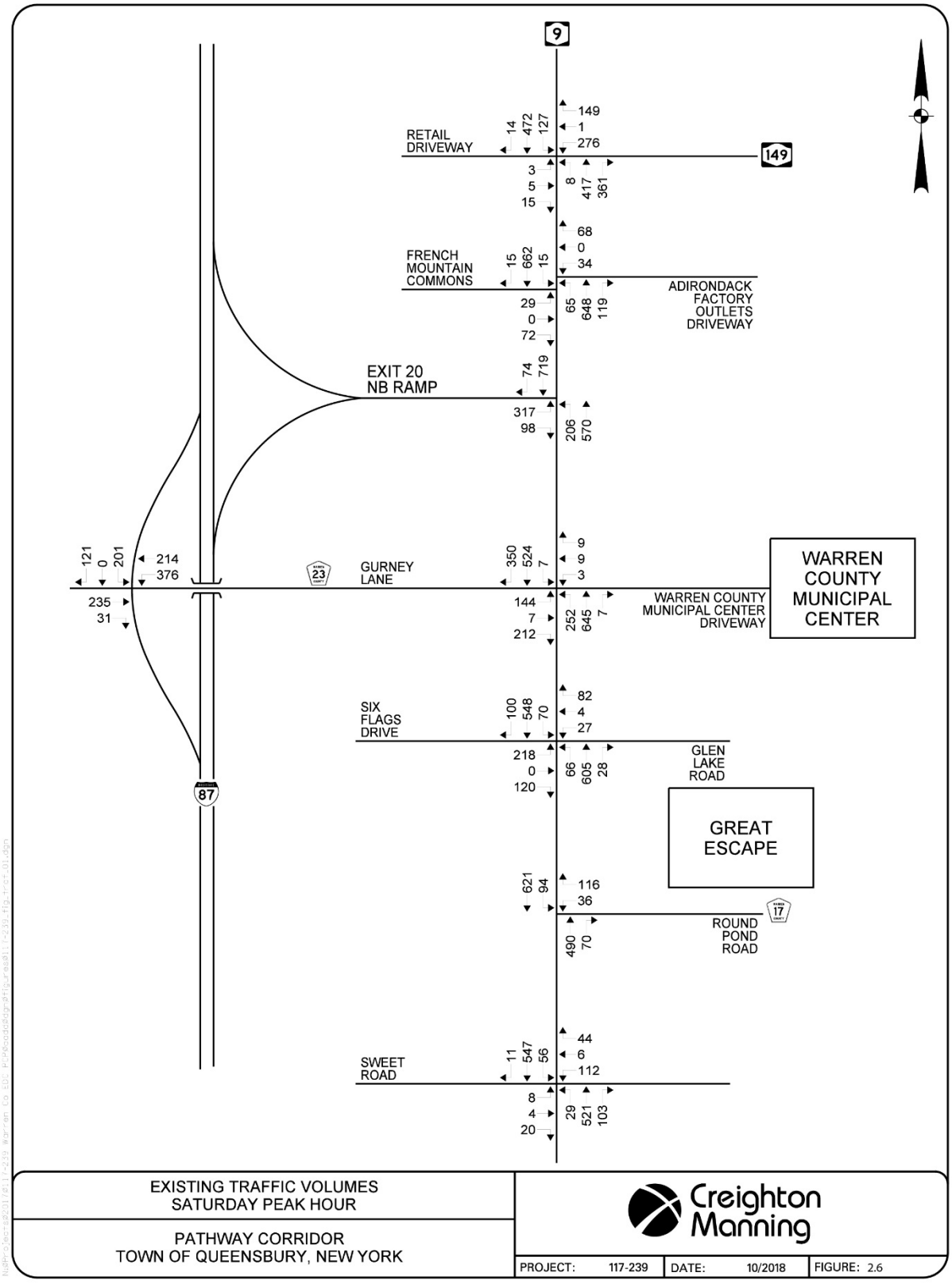
The table shows that daily traffic volumes on US Route 9 range from 15,700 to 19,200 vehicles per day during the summer. A comparison to the latest NYSDOT count in the area (Station 170433, July 2014), showed peak summer volumes were somewhat higher at 20,000+ cars per day.

The NYSDOT count is summarized in the chart below and shows that weekday and weekend traffic volumes are comparable; and that traffic volumes tend to peak in the late morning, then remain relatively stable until early evening, before dropping off.

Figure 2.5. Hourly Traffic Variations – US Route 9 (500 Feet North of Exit 20)

A review and regression analysis of historic NYSDOT Automatic Traffic Recorder sites in the area shows that daily traffic volumes have increased slightly on I-87 over the past 10 years, while traffic in the immediate study area has remained stable or decreased slightly. Annual growth rates have been ± ½ percent per year. Accordingly, the traffic counts from the previous study continue to be representative of existing conditions. Additional intersection counts were conducted at the intersection of Gurney Lane and the I-87 Exit 20 Southbound Ramps in August of 2018 to supplement available data. Volumes at the Sweet Road intersection were obtained from a previous study in the area. The existing peak hour traffic volumes are shown on Figure 2.6.

Supplemental pedestrian crossing counts were also conducted for pedestrians crossing US Route 9 in the Outlet area on Saturday, September 1, 2018 (Labor Day Weekend). The results showed approximately 870 pedestrians crossing per hour at the three uncontrolled marked crosswalks, with approximately 1,200 vehicles per hour traveling along US Route 9 during the same time period. The pedestrians in the marked crosswalks have the right of way and motorists must yield. Although the pedestrians often cross in groups, observations and data on increased travel times shows that there are enough pedestrian crossings during peak times for the number of pedestrians to contribute significantly to the traffic back-ups and delays along US Route 9 and approaches to the area.


9
149
RETAIL DRIVEWAY
14 472 127
3 5 15
149 1 276
8 417 361
FRENCH MOUNTAIN COMMONS
15 662 15
29 0 72
68 0 34
65 648 119
ADIRONDACK FACTORY OUTLETS DRIVEWAY
EXIT 20 NB RAMP
74 719
317 98
206 570
121 0 201
214 376
235 31
23
GURNEY LANE
350 524 7
144 7 212
9 9 3
252 645 7
WARREN COUNTY MUNICIPAL CENTER DRIVEWAY
WARREN COUNTY MUNICIPAL CENTER
87
SIX FLAGS DRIVE
100 548 70
218 0 120
82 4 27
66 605 28
GLEN LAKE ROAD
GREAT ESCAPE
621 94
490 70
116 36
17
ROUND POND ROAD
SWEET ROAD
11 547 56
8 4 20
44 6 112
29 521 103
EXISTING TRAFFIC VOLUMES
SATURDAY PEAK HOUR
PATHWAY CORRIDOR
TOWN OF QUEENSBURY, NEW YORK
Creighton Manning
PROJECT: 117-239
DATE: 10/2018
FIGURE: 2.6

Traffic Operations

Traffic operations were evaluated using the VISSIM software to represent existing traffic conditions and levels-of-service (LOS). LOS is a measure of delay at intersections with good operations represented by short delays in the LOS A/B range, and poor operations represented by long delays in the LOS E/F range. Table 2.6 summarizes the results of the existing summertime levels of service analysis.

Table 2.6. Existing Level of Service

Intersection	Control	Saturday Peak Hour
Route 9 / Sweet Road	Signal	A (9.9)
Route 9 / Round Pond Road	Stop Sign	B (11.8)
Route 9 / Glen Lake Rd	Signal	C (23.2)
Route 9 / Gurney Ln	Signal	C (29.5)
I-87 Exit 20 SB Ramp at Gurney Ln	Stop Sign	F (186)
Route 9 / I-87 Exit 20 NB Ramps	Signal	E (76.5)
Route 9 / Route 149	Signal	E (61.9)

X (Y.Y) = Level of Service (Average delay in seconds per vehicle)

The analysis shows that the intersections in the vicinity of the outlets (Route 149 and Exit 20 northbound ramps), experience longer delays (LOS E). Motorists on the I-87 Exit 20 southbound off-ramp also experience long delays (LOS F). Anecdotally, various stakeholders have reported that they turn right at this ramp then complete a U-turn at the adjacent intersection, in order to avoid the long delays experienced turning left directly from the ramp. Other study area intersections operate fairly well, at LOS A to C.

In addition to the LOS analysis at intersections, corridor travel times were evaluated to illustrate the overall performance of the Pathway corridor, and are used later to compare alternatives. Based on the Federal Highway Administration's National Performance Management Research Data Set (NPMRDS) as provided by the A/GFTC, travel times along US Route 9 are typically six to seven minutes longer during the summer, than during average conditions in the month of April. Table 2.7 summarizes the NPMRDS data.

Table 2.7. US Route 9 Corridor Travel Times (Minutes)

US Route 9 Segment	2017		
	Non-summer (April)	Summer (July / August)	Difference
between Route 9L and Round Pond Road			
Northbound	9.4	15.2	5.8
Southbound	12.6	19.5	6.9

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Chapter 3. Forecasts and Alternatives

Land use patterns directly influence travel. As the Pathway Corridor grows, traffic operations will we affected by increased travel times and reduced mobility, unless the growth is managed and transportation improvements occur in line with development. This chapter summarizes the land development potential in the corridor and the implications that that development will have on traffic operations. This chapter then evaluates five major transportation alternatives, as well as several additional enhancements to support the study goals of maintaining mobility and supporting economic development.

Land Use and Trip Generation

Land use forecasts were developed based on two categories of development; 1) projects that are known and are pending before the Town as of the Summer of 2018, and 2) speculative projects that could happen based on zoning, vacant or underutilized land. The Town of Queensbury provided the pending projects shown on Figure 3.1 and in Table 3.1 on the following page.

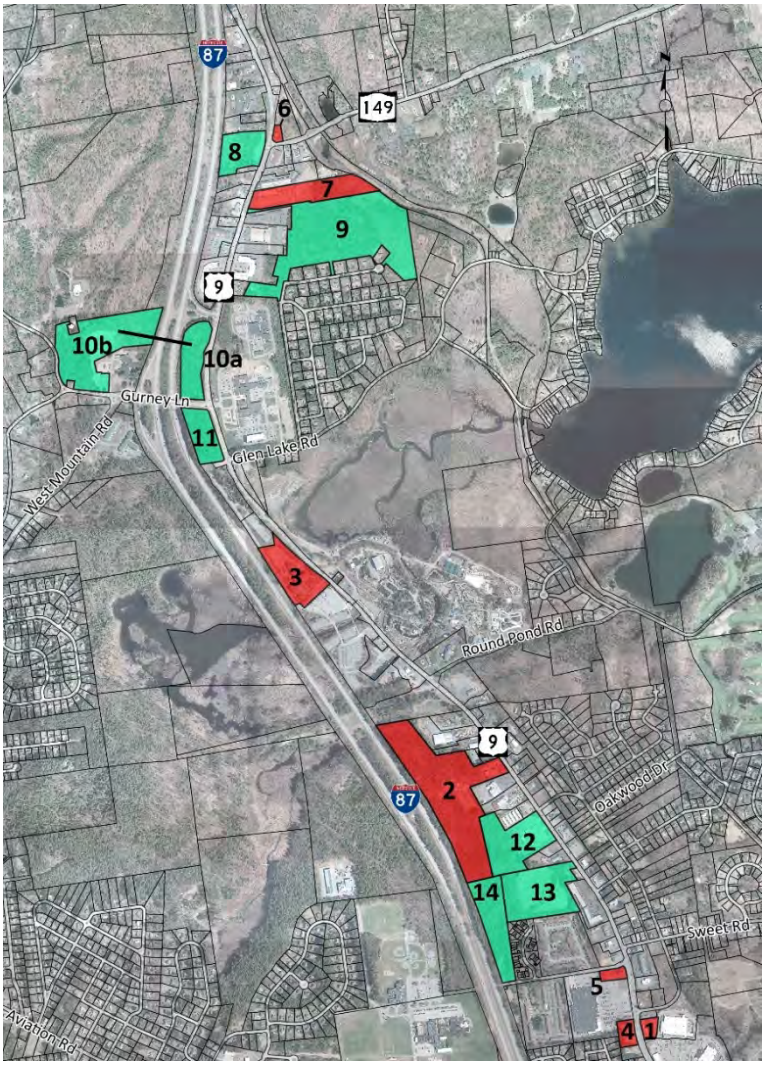

Figure 3.1 Pending and Speculative Development

Table 3.1. Pending Projects

ID	Name	Land Use	Size	Saturday Peak Hour Trips
1	Subway	Restaurant	0.9 KSF	11
2	Family Attraction	Recreation	15.5 Acres	74
3	Johnny Rockets	Restaurant	2.2 KSF	26
4	Harbor Freight	Hardware Store	16 KSF	36
5	Monty Lius Retail Store	Retail	5.4 KSF	33
6	Cumberland Farms	Gas Station/ Convenience Store	5.2 KSF	72
7	Adirondack Factory Outlet Mall	Retail	60 KSF	236

Table 3.1 shows that there are currently seven approved or pending projects before the Town. These includes more than 80 KSF of retail space and 3 KSF of dining space. There are no pending residential projects within the corridor. The zoning along the Pathway Corridor is primarily commercial and supportive of this type of growth.

As noted previously, the Pathway Corridor is a targeted growth area, and a number of parcels have the potential to develop, or redevelop to a higher use. Through coordination with the Study Advisory Committee, Warren County EDC, and the Town of Queensbury, the corridor was evaluated to identify the most likely locations for development. Table 3.2 summarizes this "speculative" or potential corridor growth which is also illustrated on Figure 3.1. The development type, size, and number of Saturday peak hour trips are shown for planning purposes only. The actual development in the corridor may vary significantly from those summarized in Table 3.2. The development potential was estimated utilizing the most recent GIS mapping data and information available from the Town and Warren County.

Table 3.2. Speculative Development

ID	Name	Assumed Development Type	Size	Saturday Peak Hour Trips
8	Oscap LTD 288.12-1-2	Retail	68 KSF	267
9	John McCormack 288.12-1-24	Single Family *	20 Units	19
10a	Warren County Annex 288.-1-49	Office	75 KSF	40
10b	Warren County Annex 288.-1-49	Multi-family Housing	130 Units	57
11	Warren County DPW288.-1-62	Retail	20 KSF	100
12	Frank Parillo 296.13-1-23	Retail	54 KSF 80 KSF	314
13	Unitarian Universal Con of GF 296.13-1-21	Retail Office	146 KSF	311
14	Turnpike Ent & Grand LLC 296.13-1-20	Office Park	146 KSF	31

* Zoned residential. Town expects owner to seek variance for commercial.

The combined effect of the pending and speculative development shows that there are 14 parcels that could support approximately 600,000 square feet of additional development, and generate approximately 1,800 additional peak hour trips. For the purpose of this traffic planning study, to account for regional background traffic growth and study area growth over the next 20 years, the existing traffic volumes were increased by 30 percent. This estimate is generally consistent with the previous 2008 planning study which included growth projections ranging from 27 to 48 percent.

Alternatives

There are three basic transportation alternatives for the Pathway Corridor which include doing nothing, improving the existing roads, or building new roads. The alternatives are broken down further for this study, but the premise is to keep the alternatives at a high level to enable consensus and pursue funding around major alternatives, and then refine the plan through engineering and design.

Several alternatives were developed for the Outlet Area, as well as various site specific improvements in the larger pathway corridor study area. The alternatives were developed based on the analysis of existing conditions, previous studies, and input from the Pathway Corridor Committee. Table 3.3 on the following page summarizes the primary alternatives for the outlet area.

Table 3.3. Outlet Area Alternatives

ID	Name	Description
A	Null or Do Nothing	Generally maintain existing transportation infrastructure. This would keep the existing roadways as they are and serves as a baseline for comparison of other alternatives.
B1	Improve Existing and Manage Pedestrian Crossings	Widen US Route 9 to five lanes between Exit 20 NB ramp intersection and NY Route 149. This alternative would provide additional vehicle capacity and improve traffic through put in the corridor. Pedestrian crossings would be managed by signalized pedestrian crossings that are coordinated with the adjacent signals.
B2	Improve Existing (Roundabouts)	Add a raised median on US Route 9 from I-87 Exit 20 NB ramp to NY Route 149 and incorporate roundabouts including a mid-corridor roundabout to enable U-turns. Roundabouts tend to keep traffic moving as compared to the stop and go operation of traffic signals.
C	Back Access	Construct a new road on the east side of US Route 9 that connects the I-87 Exit 20 NB ramp intersection to NY Route 149 and generally runs parallel to US Route 9. This alternative would provide access to the backside of the existing outlet buildings.
D	New Interchange	Construct a new interchange on I-87 at NY Route 149. The 2009 *Corridor Management Plan* deemed this concept not feasible. This alternative is carried forward for information purposes to communicate the trade-offs and costs.

Additional improvements were considered in the remainder of the Pathway Corridor as described later in this Chapter and also in Chapter 4. These additional layers of improvements establish the overall Plan when combined with the Outlet Area alternatives above.

Analysis

Since congestion is one of the key concerns in the study area, travel time was used as one of the primary performance measure to compare the trade-offs of the Outlet area alternatives. It is the recurring delay in the summer months that is a deterrent to motorists and could threaten the future economic vitality of the area. Alternatives that minimize travel time are better suited to address the project objectives of alleviating traffic congestion and supporting economic growth. Combined with appropriate multi-modal accommodations, the alternatives will also address the project objectives of safety and accommodating all users.

Vissim traffic simulation models were developed for the outlet area alternatives to compute and compare the overall travel times in the area. For the purpose of this comparison, travel times are reported along US Route 9 between Bloody Pond Road and Round Pond Road, and along Route 149 between Oxbow Hill Road and Round Pond Road, a distance of approximately three miles. It is noted that these segments are different than the NPMRDS data summarized in Section 2, because the NPMRDS extends well beyond the Pathway Corridor study area. The end points for this travel time summary were selected based on discussions with the Advisory Committee to capture conditions within 1.5 to 2 miles north and east of the US Route 9 / NY Route 149 intersection.

Table 3.4. Corridor Travel Times – Existing and Future Summer Conditions (Minutes)

Description / Condition	Alternative				
	2018	Future 2038			
	Existing	A	B1	B2	C
Route 149/Oxbow Hill Road to US Route 9 / Round Pond Road	12	24	5	14	7
US Route 9/Bloody Pond Road to US Route 9/Round Pond Road	11	21	6	17	11

Table 3.4 shows that travel times through the area are on the order of 11 to 12 minutes during existing summer conditions. If nothing is done to improve traffic conditions, then travel times could double assuming the area continues to grow. Realistically, it is expected that people would avoid the area rather than experience delays at this level. Table 3.4 also shows the Alternative B1 (Improve Existing and Manage Pedestrian Crossings) has the greatest potential to reduce travel times through the area. Alternatives B2 (roundabouts), and C (Back access) could also improve travel times over the "Do Nothing" alternative, but to a lesser degree. All of the alternatives are considered feasible and would have different levels of impact to private property from widening Route 9, constructing roundabouts, or building a back access road.

It should be noted that Alternative D (New Interchange) was not modeled in detail. Although a new interchange would reduce through traffic in the outlet area to/from Route 149, this would be offset by increased traffic to/from the south and the Great Escape area. The net effect is that traffic volumes through the outlet area would remain relatively unchanged with a new interchange, and some other improvements would still be needed to address congestion issues.

The following Figure compares the proposed alternatives against several performance measures including travel time, vehicle operations, pedestrian friendliness, property impacts, and cost. Travel time is also a proxy for reduced queuing and vehicle emissions

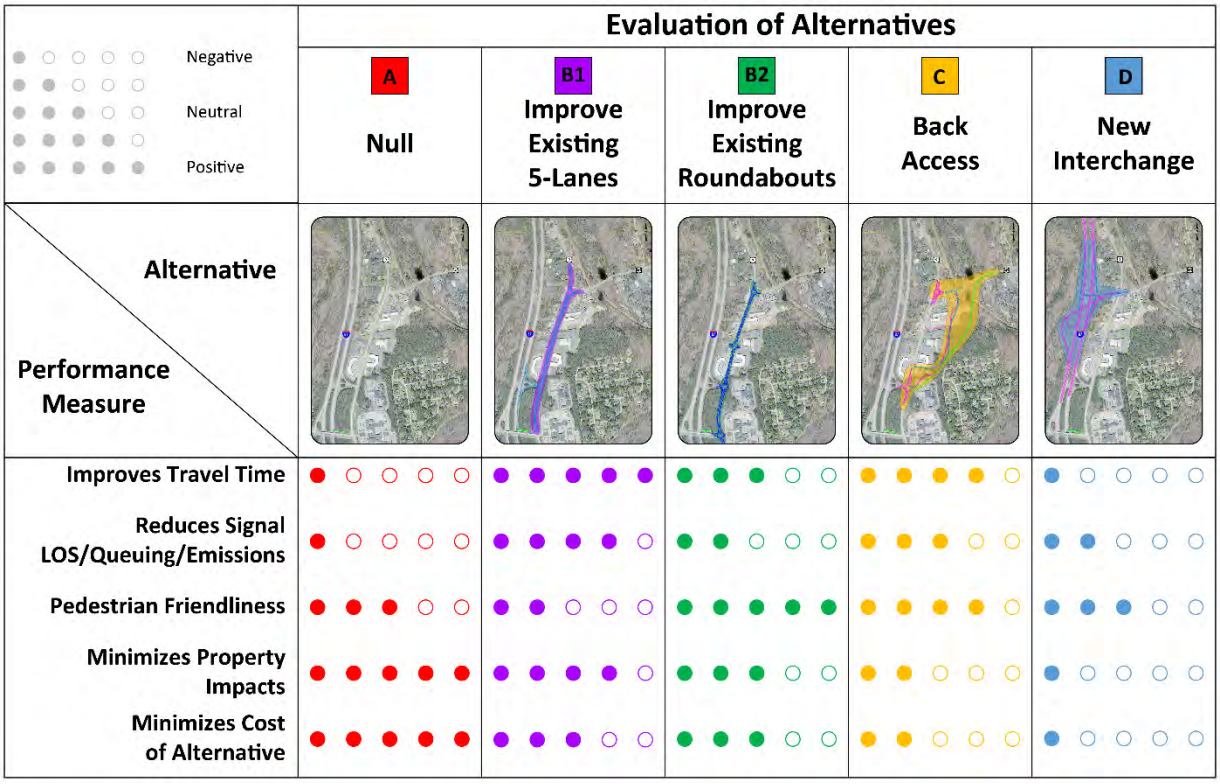

Figure 3.2 Evaluation of Alternatives

Figure 3.2 shows that the two "Improve Existing" Alternatives (B1 and B2) appear to be the most cost effective at addressing the majority of the corridor performance measures. Alternatives A and D are rejected as not satisfying the project objectives. Alternative A (the do nothing alternative) is unresponsive to the mobility, growth and economic development objectives of this study. Alternative D (a new Interchange) is not considered feasible, and it would not obviously address the outlet area congestion, pedestrian management and capacity constrained issues identified. While Alternative C appears to have merit, it is an idea that has been around for over twenty years and has not progressed, even when the new jail was built and there was a prime opportunity to construct the southern portion of it, the involved agencies decided against it. Some residents of the nearby Courthouse Drive neighborhood also oppose it. Based on this assessment, and public and stakeholder input discussed later, some form of "Improve

Existing" (B1/B2) is the preferred alternative. This would be road widening along US Route 9 with managed pedestrian crossings and could include a combination of roundabouts and/or traffic signals at major intersections. NYSDOT policy requires roundabouts to be considered as an alternative during a project's design phase. All transportation concepts require further engineering and review, and the final details of the "Improve Existing" alternative will be documented during the design process and with additional public involvement.

Aside from the Alternatives above that address congestion in outlet area, there is a need to explore improvements in other parts of the Pathway Corridor as well. Long delays exist at two unsignalized study area intersections during the summer months including the Gurney Lane/Exit 20 southbound ramp intersection, and the US Route 9/Round Pond Road intersection. Independent stakeholder, Advisory Committee and public comments also pointed to concerns at these two locations. As such, detailed traffic signal warrants analyses were completed as summarized below.

The National *Manual on Uniform Traffic Control Devices* (NMUTCD) specifies the minimum criteria that must be met in order for a traffic signal to be justified. The satisfaction of a signal warrant in itself is not necessarily justification for a traffic signal. Other engineering and operational factors must be considered. The National MUTCD contains eight warrants, three of which were applied and evaluated in detail. Tables 3.5 and 3.6 summarize the signal warrants analysis for these two intersections based on counts conducted during the summer of 2018.

Table 3.5. Summary of Signal Warrant Analysis – Gurney Lane / Exit 20 Southbound Ramp

Hour Beginning	Existing 2018 Volumes		Signal Warrants Met?			
	Gurney Lane	Exit 20 Southbound off ramp	#1		#2	#3
			Cond. A	Cond. B		
6:00 AM	311	100	No	No	No	No
7:00 AM	501	210	Yes	No	No	No
8:00 AM	573	237	Yes	No	Yes	No
9:00 AM	604	258	Yes	No	Yes	No
10:00 AM	683	321	Yes	No	Yes	No
11:00 AM	747	313	Yes	No	Yes	Yes
12:00 PM	752	298	Yes	Yes	Yes	No
1:00 PM	724	306	Yes	No	Yes	No
2:00 PM	731	287	Yes	No	Yes	No
3:00 PM	786	295	Yes	Yes	Yes	Yes
4:00 PM	839	304	Yes	Yes	Yes	Yes
5:00 PM	770	277	Yes	Yes	Yes	No
6:00 PM	590	219	Yes	No	No	No
7:00 PM	590	219	Yes	No	No	No
Required Volumes	Two Lane Major Street		500	750	See MUTCD 4C-1	See MUTCD 4C-3
	Two Lane Minor Street		150	75		
Overall Warrant Met?			Yes	No	Yes	Yes

Table 3.6. Summary of Signal Warrant Analysis – US Route 9 / Round Pond Road

Hour Beginning	Existing 2018 Volumes		Signal Warrants Met?			
	US Route 9	Round Pond Road	#1		#2	#3
			Cond. A	Cond. B		
7:00 AM	517	115	No	No	No	No
8:00 AM	713	137	No	No	No	No
9:00 AM	857	168	Yes	No	No	No
10:00 AM	979	162	Yes	Yes	Yes	No
11:00 AM	1174	185	Yes	Yes	Yes	No
12:00 PM	1246	172	Yes	Yes	Yes	No
1:00 PM	1310	165	Yes	Yes	Yes	No
2:00 PM	1313	171	Yes	Yes	Yes	No
3:00 PM	1326	218	Yes	Yes	Yes	Yes
4:00 PM	1238	207	Yes	Yes	Yes	No
5:00 PM	1096	169	Yes	Yes	Yes	No
6:00 PM	946	135	No	Yes	No	No
7:00 PM	841	132	No	No	No	No
8:00 PM	784	75	No	No	No	No
Required Volumes	Two Lane Major Street		500	750	See MUTCD 4C-1	See MUTCD 4C-3
	Two Lane Minor Street		150	75		
Overall Warrant Met?			Yes	Yes	Yes	Yes

The analysis shows that traffic signals are currently warranted at both locations, subject to NYSDOT review and approval. According to the MUTCD, Warrant 1 Condition A requires eight hours above the required volume thresholds, and is intended for application where a large volume of intersecting traffic is the principal reason to consider installing a signal. Warrant 1 Condition B is for application where Condition A is not met, and the traffic volume on the major street is so heavy that traffic on the minor street suffers excessive delay. Warrant 2 requires four hours above the required volume thresholds and is intended where the volume of intersecting traffic is the principal reason to consider a signal. Warrant 3 is the peak hour warrant, requires only a single hour above the volume thresholds and is intended for use where the minor-street approach suffer undue delay when entering or crossing the major street.

Anecdotally, several public comments reported long delays and queuing on the Exit 20 southbound off-ramp, and that motorists will bypass the queue, then turn right at the top of the ramp, then complete a U-turn at the adjacent intersection to continue east on Gurney Lane. Additional public comment reported difficulty getting in and out of Weeks Road between the two closely spaced traffic signals at Sweet Road and Walmart. Weeks Road provides access to a densely developed residential area leading to a recommendation described in the next Chapter to realign Weeks Road opposite Sweet Road. Public and stakeholder comments are discussed further in the following section.

Stakeholder and Public Involvement

Public participation for this study to date has included six stakeholder meetings and one public meeting. Meeting summaries for all meetings are provided on the project website WCPathway.com. The six stakeholder meetings included:

- Property owners in the outlet area (3)
- Six Flags Great Escape
- NYSDOT
- Warren County Emergency Services (Police/Fire/EMS)

While a synopsis of the Stakeholder comments is provided here, readers are encouraged to read the entire record of comments for a full understanding. The major take-aways from the stakeholder meetings are listed below:

- NYSDOT has not been funding capacity related projects, without other compelling reasons. Programming is focused on a "Preservation First" policy and that their limited available funding is better dedicated to maintaining existing transportation infrastructure. If capacity improvements are identified as part of this study, the sponsors will also need to find some funding outside NYSDOT channels.
- NYSDOT noted that other municipalities are pursuing road diets (reduced capacity) rather than increasing vehicular capacity. The outlet area of the Pathway corridor already exhibits many of the characteristics that communities are striving for, including slow moving traffic where it is relatively convenient for pedestrians to cross the street.
- EMS generally supported Alternative B1 (5-lanes) recognizing that this option would improve travel times, but would be less pedestrian friendly as compared to existing conditions. It was noted that pedestrians would be more apt to cross at signals and in groups, and that the corridor might function more like Route 9 through the Village of Lake George.
- EMS was generally opposed to the raised medians combined with a single travel lane in Alternative B2, noting that the median reduces the ability for emergency vehicles to pass standstill traffic. They also believed Back Access (Alternative C) was not possible due to construction of the jail.
- Six Flags Great Escape supported the need for improvements at Round Pond Road and additional enhanced pedestrian crossings coordinated with bus stop locations.
- Two of three outlet owners were somewhat open to a transportation project in the outlet area that includes some widening and pedestrian crossing management. There are concerns about property impacts such as loss of parking, loss of visibility, impacts to truck deliveries, and impacts to storm water ponds among others.
- One outlet owner was strongly opposed to a roadway widening transportation project through the outlet area, noting that it will increase accidents and be less safe.
- Two of three outlet owners were opposed to the Back Access (Alternative C)
- Outlet owners supported less intense improvements, such as signing alternate routes, and providing a crossing guard a peak times to facilitate pedestrian crossings.

- Outlet owners also noted that this corridor creates very large tax revenue and jobs. It's important to maintain a continued successful business environment.

The first public meeting was held on September 27, 2018 to present the corridor conditions and alternatives, and to receive input on the alternatives.

As part of the meeting, attendees participated in a ranking exercise to understand the extent to which existing traffic congestion in the outlet area influenced their travel behavior. Most people (65%) indicated that they "often" avoid the area due to traffic congestion. Some indicated that they could not avoid the area since they lived nearby. Taken together, travelers often avoid the area due to traffic and were interested in exploring transportation improvement alternatives. Although this was a relatively small sample, other stakeholders have made the same comment over the course of the study. The concern is that people and potential future growth will continue to avoid the area to the detriment of economic vitality.

Summary

Considering all public comments, it appears that a majority of people support a transportation improvement project through the outlet area that includes some roadway widening, and managing pedestrian crossings at signals. Other improvements such as a capacity improvement at the Gurney Lane/I-87 Southbound ramps intersection, completing pedestrian connections, and providing a traffic signal or roundabout at Round Pond Road are also supported. The following Table (3.6) summarizes the intersection levels of service that would be experienced in the Pathway corridor as a result of these improvements which form the basis of the recommended Plan discussed in the next Chapter. The analysis also shows that widening US Route 9 and managing the pedestrian crossings will provide good traffic operations and intersection levels of service in the outlet area.

Table 3.7 – Overall Levels of Service

Intersection	Do Nothing	The Plan	
Route 9 / Round Pond Road	F (69.7) ^{U}	B (13.5) ^{S}	B (12.9) ^{R}
Route 9 / Glen Lake Rd	E (71.4) ^{S}	E (71.4) ^{S}	-
Route 9 / Gurney Ln	E (70.5) ^{S}	B (19.5) ^{S}	-
I-87 Exit 20 SB Ramp at Gurney Ln	F (234) ^{U}	E (76.6) ^{S}	B (12.5) ^{R}
Route 9 / I-87 Exit 20 NB Ramps	F (93.2) ^{S}	B (15.8) ^{S}	B (11.3) ^{R}
Route 9 / Route 149	E (78.2) ^{S}	C (29.9) ^{S}	A (8.8) ^{R}

X (Y.Y) = Level of Service (Average delay in seconds per vehicle)
U Unsignalized, S Signal, R Roundabout

Chapter 4. Conclusions and Recommendations

> 65% of the people at the public meeting indicated they often avoid the area due to traffic congestion.

The Pathway Corridor is a vital commercial area with local and regional mobility needs that is hampered by recurring congestion. While the area currently thrives economically, sixty five percent of the attendees at the first public meeting indicated that they "often" avoid the area due to traffic congestion. This includes would-be shoppers and regional travelers as well. The potential for additional economic development and jobs appears limited without transportation investment in the area. Meanwhile, the corridor is targeted for additional growth. Ensuring that the transportation facilities are capable of accommodating the increased demand associated with the new development, achieving consensus about the needed transportation improvements, and finding a way to pay for the improvements are the fundamental challenges of this study. The following Plan describes the way forward to achieve the goals and objectives of this study.

The Plan

The Plan is to provide good regional mobility and support and ensure the economic livelihood of the area, through context sensitive transportation improvements. The analysis has shown that traffic signals or roundabouts may be provided at the major intersections. Based on the NYSDOT Highway Design Manual (Section 5.9.1) "*when a project includes reconstructing or constructing new intersections, a roundabout alternative is to be analyzed to determine if it is a feasible solution based on site constraints, including ROW, environmental factors, and other design constraints.*" and *"When the analysis shows that a single lane roundabout is a reasonable alternative, it should be considered the Department's preferred alternative*." T The type of intersection control (signal vs roundabout) needs to be evaluated further and the decision documented during the design process. Figure 4.1 at the end of this Chapter summarizes the overall study recommendations as described in more detail below. It should be noted that the following descriptions begin at the southern end of the corridor and then continue north. The improvements are not listed in priority order.

1. Beginning at the south end of the Pathway corridor, the recommendation is to realign Weeks Road opposite Sweet Road to provide a four-way signalized intersection. This would improve access to/from US Route 9 for the residents of Queensway, Robert Gardens, and Needle Point Circle. Some private property acquisition will be needed for the new road adjacent to Outback Steakhouse. This could be a stand-alone project.

2. Continuing north, there are several parcels on the west side of US Route 9 that could develop or redevelop in the foreseeable future. Planning for a single point of access for these parcels opposite a public street (Montray Road), will maximize the value of a potential future traffic signal on US

Route 9. The new signal would provide good spacing (approximately half mile) to adjacent intersections including the existing traffic signal at Sweet Road, and a potential future signal at Round Pond Road. The new signal would also facilitate access management improvements along property frontages in the area. The Town will need to insure access agreements and cross connections between parcels during site plan approval process. As it is currently envisioned, the Town will need to facilitate the new 4-way intersection including property acquisition for a small realignment of Montray Road to the south. The new signal would include all necessary pedestrian crossing accommodations, and a possible future transit stop.

3 4 5 In the vicinity of Round Pond Road, the Plan calls for a number of improvements including constructing a driveway stub opposite Round Pond Road to create a 4-way intersection (signal or roundabout). This will facilitate the future construction of the southern access road by Great Escape to the Great Escape Parking areas. Access to Martha's Ice Cream will be provided to the new side road, allowing at least the southern-most Martha's Ice Cream driveway to be closed and reducing conflicts on US Route 9. Improvements also include widening Round Pond Road to provide separate left and right turn lanes under the signal option, completing pedestrian crossing improvements, and constructing a sidewalk along Round Pond Road to the Great Escape Employee entrance. Creating a 4-way signalized intersection at Round Pond Road, is one of the Great Escape Level 3 improvements discussed on page 4 of this study. This study recommends advancing the project sooner as a public private partnership and confirming the intersection control (roundabout vs signal) through further study. The crash analysis in Chapter 2 showed that the crash rates at this intersection are above the statewide average for similar intersections, so the project might be eligible for funding through the Highway Safety Improvement Program (HSIP).

6 Between Great Escape and Glen Lake Road there is a gap in the existing sidewalk network that extends for a distance of approximately 2000 feet. The Plan recommends a sidewalk in this area on at least one side of US Route 9. Initial indications are that the new sidewalk should be on the east side of the road to serve pedestrian movements in the area, which should be confirmed during design. It is noted that summer employees at the Great Escape often walk this section of road.

7 The recommendation along Gurney Lane (County Road 149) is to provide bicycle accommodations when the bridges over the Northway are rehabilitated. Two separate bridges carry the road over the Northway (BIN 1095860 is over the northbound lanes, and BIN 1033510 is over southbound lanes. Based on the latest NYSDOT inventory and inspection reports (August, 2018), both bridges are in decent condition receiving general ratings of 4.9 (NB) and 4.6 (SB), out of a 7 point scale. They were built in 1960 and underwent a major rehabilitation in 1992. Judging by the deterioration noted in the inspection reports, as well as, the fact that the last major rehab was 26 years ago, it is reasonable to think that they will be due in the next 10 years or so for another rehabilitation. Warren County should monitor the bridge rehabilitation schedule to facilitate implementation of this bike lane recommendation.

8 In the area of Interchange 20, the Plan is to build the improvements generally consistent with the Great Escape Level 3 mitigation, which includes providing two southbound through lanes on U.S Route 9 from the Exit 20 northbound off-ramps to Glen Lake Road. Further analysis during design

will determine if the Exit 20 northbound off-ramp should be controlled by a traffic signal or roundabout.

9 There is a need for capacity improvements at the Gurney Lane/ Exit 20 southbound off-ramp intersection. A short term relatively cost effective improvement is to install a traffic signal subject to NYSDOT review and approval. While this would address the existing traffic concerns, the traffic analysis shows that the signal would eventually operate near capacity after the 30% growth discussed in Chapter 3 potentially with long queues on Gurney Lane extending back to US Route 9. An alternative to the signal is to fund a larger longer term capacity improvement that could include a roundabout, or turn restrictions at the ramp termini (right turns only), combined with a roundabout at the adjacent intersection to facilitate U-turns. The short term recommendation is to fund a "Capacity Improvement" at the intersection and that the decision for a roundabout vs traffic signal can be confirmed during preliminary design.

10 Off road recommendations include the development of a trail head parking area at the Warren County Municipal Center with a multi-use path connection to the Warren County Bikeway. The path would also connect to the back of the outlets in the area of the Adirondack Factory Outlet Mall for employees, shoppers and tourists.

11 There would be additional capacity at the Exit 20 northbound ramp intersection beyond what is proposed in the Great Escape Level 3 improvements (including double left turn lanes on the ramp, and two northbound through lanes under the signal option). North of Interchange 20, the Plan calls for a roadway capacity and pedestrian crossing management project. Pedestrian crossing volumes are currently at the level to justify Pedestrian Hybrid Beacons or signalized pedestrian crossings. The recommendation is to include several signalized pedestrian crossings at or near where they exist today, and to coordinate the pedestrian signals with the adjacent signals at the Exit 20 northbound ramp and NY Route 149. The Plan also includes widening US Route 9 to four or five lanes in this area, which will be evaluated further during design. These improvements will provide controlled pedestrian crossings and the additional capacity needed in the corridor to address existing congestion and accommodate future growth.

12 Access management improvements include the connector road concept shown on Figure 4.1 as well as driveway modifications, consolidations other shared access or cross connections between parcels. Reducing and consolidating driveways can reduce overall crash rates.

G The General corridor theme also includes coordinating with Greater Glens Falls Transit (GGFT) to locate future transit stops at traffic signals or other locations with enhanced pedestrian crossings.

The Plan will provide good overall multi-modal traffic operations and supports the goals and objectives of this study.

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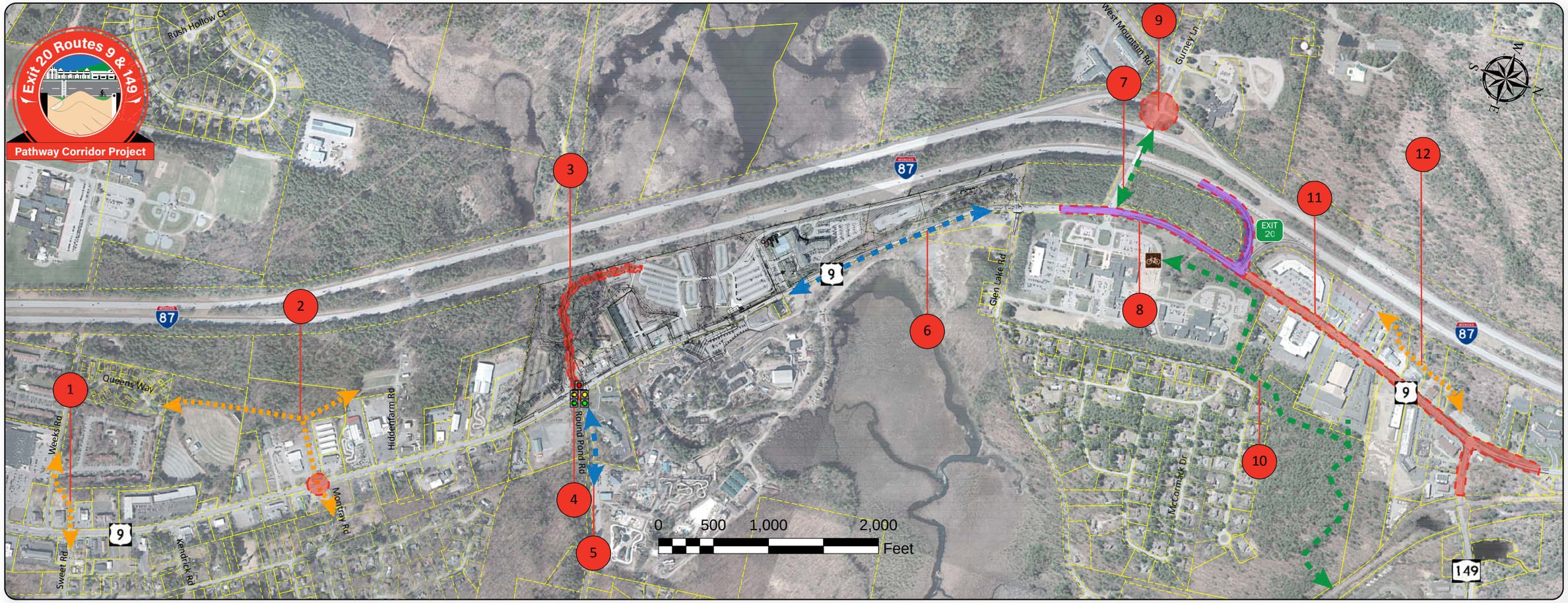

1. Realign Weeks Road to intersect US Route 9 opposite Sweet Road. ($410,000)
2. As redevelopment occurs on the west side of US Rotue 9, provide access opposite Montray Road to a potential future traffic signal or roundabout on US Route 9. Establish connector road to Queens Way and shared access to the new intersection. (Cost TBD public/private)
3. Construct Great Escape Connector Road - (future improvement by Great Escape).
4. Create a four-way intersection at Round Pond Road including a new traffic signal or roundabout and widening Round Pond Road to provide separate turn lanes. The new driveway stub on north side will tie into the future connection by Great Escape. Modify access to Martha's ice cream to provide access to the new signal or roundabout, and consolidate driveways on Route 9. ($760,000 or $1,820,000 if roundabout)
5. Provide sidewalk connection between US Route 9 and Great Escape employee entrance. ($510,000)
6. Provide sidewalk on at least one side to fill gaps in pedestrian network. East side of road is preferred. ($1,150,000)
7. Widen Gurney Lane and provide bike accomodations when bridges are rehabilitated. (Cost TBD as part of bridge project)
8. Build improvements consistent with Great Escape mitigation level 3 (Lengthen Exit 20 Northbound ramp storage and add southbound through lane on US Route 9) – Pursue funding arrangement to complete the improvements prior to Great Escape Level 3 Thresholds being met. Facilitate future parcel access on west side of US Route 9. ($3,640,000)
9. Implement capacity improvement (1. Roundabout; 2. Turn prohibition with adjacent roundabout or; 3. Signal). Traffic Signal at Gurney Lane/Exit 20 Southbound Ramp intersection is the preferred short-term improvement. ($240,000 or $1,400,000 if roundabout)
10. Establish trailhead parking at Warren County Municipal Center and provide multi-use path connection to Warren County Bikeway. Provide path connection from Outlets to Warren County Bikeway. ($1,360,000)
11. Construct roadway capacity and pedestrian crossing management project, including consideration of widening US Route 9 to provide two lanes in each direction with a center turn lane and signalized pedestrian crossings or roundabouts. ($8,900,000 or $13,400,000 if roundabouts)
12. Establish connector road over time as parcels redevelop. (Cost TBD - Private)

G. General Pathway Corridor Theme: Provide pedestrian accomodations at traffic signals, and establish transit stops at signals or where established pedestrian crossings exist.

Note: Improvements listed from south to north, not in order of importance

EDC Warren County, NY

Suggested Improvements
Warren County Pathway Corridor

Creighton Manning

Figure 4.1 Draft: December, 2018

Implementation and Funding

This plan recommends that the Town and Warren County EDC work proactively to identify local funding sources to establish the local match for a larger public project (or projects), and to work with the AGFTC and the NYSDOT to get a Pathway Corridor Project on the local and Statewide Transportation Improvement Program (TIP). To be proactive, the Town or EDC could bond the local match prior to seeking funding to demonstrate the local commitment. In addition, smaller projects like the Round Lake Road Signal improvement may be funded and implemented separate from a larger roadway capacity project in the outlet area. The same goes for the proposed sidewalk and path projects, which could be eligible for separate bicycle and pedestrian funding sources. Private funding through cooperative arrangements, site plan approval and SEQR mitigation should also play a role. The proposed driveway improvements opposite Round Pond Road are a good example of this, where conversations with local land owners have indicated a willingness to participate in the project and share in the cost. The following table (4.1) summarizes the Implementation Plan and costs, including proposed projects, partners, and potential funding sources. The costs include right-of-way where anticipated and all design and construction inspection. EDC, Warren County, and the Town of Queensbury have the primary responsibility of following through on the Plan to seek and secure funding for implementation. The projects are listed from south to north and are not in priority order.

Table 4.1. Implementation Plan and Costs

ID	Description	Partners	Cost (Millions)	Potential Funding Sources
1	Realign Weeks Road opposite Sweet Road	Town, County NYSDOT	$0.41M	Town / County, private
2	Provide shared access opposite Montray Rd	Public/private	TBD	Town / County, Developer
3	Construct Great Escape southern connector	Great Escape	TBD	Great Escape
4	Create 4-way intersection at Round Pond Rd and complete access management improvements at Martha's Ice Cream	Town, County, Great Escape, Martha's	$0.76M to $1.82M	Town, County, Private, State (HSIP)
5	Extend sidewalk along Round Pond Road between US Route 9 and Great Escape employee entrance	Town, County	$0.51	Town, County, State (TA)
6	Fill gap in sidewalk network on US Route 9 between Great Escape and Glen Lake Rd	Town, County, NYSDOT	$1.15M	Town, County, State, (TA)
7	Widen Gurney Lane to provide bike accommodations	Town, County, NYSDOT	TBD	Town, County, State (NHPP)
8	Build capacity improvements at Exit 20 northbound ramps and along US Route 9 generally consistent with Great Escape Level 3 mitigation	Town, County, NYSDOT, Great Escape	$3.64M	Town, County State (TIP / HSIP/ BUILD)
9	Implement capacity improvement (Signal or roundabout)	Town, County, NYSDOT	$0.24M to $1.4M	Town, County, State
10	Establish trailhead parking at Warren County Municipal Center and provide path connection to Warren County Bikeway	Town, County	$1.36M	Town, County, State (TA)
11	Construct roadway capacity and pedestrian management project between Exit 20 northbound ramps and NY Route 149.	Town, County, NYSDOT	$8.9M or $13.4M	Town, County State (TIP / BUILD)
12	Establish connector road / cross connections between parcels in the outlet area	Town, private	TBD	Private
G	Provide pedestrian accommodations at signals, and establish transit stops where established pedestrian crossings exist.	Various	TBD	Within other projects
	Total of all Projects		**$17.0M to $23.7M**	

It is acknowledged that State's transportation resources are constrained. The current public funding policy for transportation projects in New York is focused on "preservation first" to keep the existing transportation system and bridges in a state of good repair. The State generally does not have the ability to address congestion and capacity issues, and funding for those types of projects is rare. Projects that address identified safety needs or that are shown to create new jobs, have a better chance when competing for the limited public funds that are available. Similarly projects that show a local funding commitment also have a better chance to leverage State funds.

Below is a description of the available Federal, State and Local funding sources.

Federal

TIP – The Transportation Improvement Program (TIP) is a five-year capital improvement program that allocates federal highway funds to surface transportation projects that have been selected through A/GFTC's planning process. A/GFTC updates the TIP every two years to maintain a current list of projects. Below are several federal funding sources typically found on the TIP:

- HSIP – Highway Safety Improvement Program funding is for projects designed to achieve significant reductions in traffic fatalities and serious injuries on all public roads.
- NHPP – National Highway Performance Program funding for projects that support progress toward achievement of national performance goals for improving infrastructure condition, safety, mobility. Although mostly used for maintenance, some funding can be eligible for capacity projects.
- TA – Transportation Alternatives funding is a set-aside of funds under the Surface Transportation Block Grant (STGB) Program for on and off road pedestrian and bicycle facilities, non-driver access to public transportation, and safe routes to schools. States have flexibility in how the TA program is administered and the New York State program is run through the state level TAP office.
- BUILD – Better Utilizing Investments to Leverage Development grants (formerly TIGER) are for investments in surface transportation infrastructure. Grants are awarded on a competitive basis for projects that will have a significant local or regional impact.

State

- State Dedicated Funds – Programmed at the discretion of the NYSDOT.
- CFA/REDC – The Consolidated Funding Application is an efficient, streamlined tool to apply for State economic development funds. The application examines funding for transportation infrastructure from multiple State sources including NYSDOT.
    - The Local Waterfront Revitalization Program (LWRP) is one of the grant sources under the CFA, and although not intuitively tied to the transportation projects in the Pathway corridor, funding is available for resource protection and storm water improvements. It is noted that the study area storm water eventually outlets to Lake Champlain.

- CHIPS – The Consolidated Local Street and Highway Improvement Program provides State funds to municipalities to support the construction and repair of highways on the State highway system. In order to be eligible for CHIPS funding, the project must be undertaken by a municipality (i.e. Town of Queensbury), be for a highway-related purpose, and have a service life of 10 years or more.

Local

- As discussed previously, federal transportation programs typically require a 20% local match. The Town or Warren County should plan to cover a portion of the project's cost through their general fund or bonding.
- Private mitigation funding through traffic impact studies and SEQR documentation can be used for access management changes, sidewalk and landscaping along site frontages.

In conclusion, the Town of Queensbury should adopt or formally acknowledge the findings of this Planning Study as a first step to pursue funding and ultimately to implement the recommendations of this study.